

Appln. No. 10/724,948

Docket No. GP-302434/GM2-0079

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (currently amended) A method of joining a pair of overlapping workpieces, the method comprising:
providing a first workpiece and a second workpiece having surface characteristics that result in one or more gaps at an interface when the workpieces are placed one on top of the other;
disposing a filler material at ~~a gap~~ the interface between the pair of overlapping workpieces, the filler material comprising a skeletal structure having porous regions defined by solidly connected ligaments;
applying a pressure to at least one of the workpieces so that the filler material is crushed to substantially fill the one or more gaps; and
joining the two workpieces together in a region defined by the filler material.
2. (original) The method of claim 1, wherein the filler material has an initial density and after the pressure has been applied, the filler material has a final density, wherein the final density is greater than the initial density.
3. (original) The method of claim 1, wherein an initial density of the filler material is greater than or equal to 2%.
4. (original) The method of claim 1, wherein an initial density of the filler material is greater than or equal to 2% and less than or equal to 50%.

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5. (previously presented) The method of claim 1, wherein, after the pressure is applied, a final density of the filler material is greater than or equal to 70% and less than 100%.

6. (original) The method of claim 1, wherein, after the pressure is applied, a final density of the filler material is greater than or equal to 90%.

7. (original) The method of claim 1, wherein the filler material is a porous material.

8. (original) The method of claim 7, wherein the porous material includes a honeycomb structure or a fibrous material.

9. (previously presented) The method of claim 1, wherein the filler material is made from a material whose compatibility has been established by the American Welding Society.

10. (original) The method of claim 1, wherein the filler material is made from a material that is metallurgically compatible with a material of the workpieces.

11. (original) The method of claim 1, wherein joining is at least one of brazing, gas metal arc welding, gas tungsten arc welding, plasma welding, electron beam welding and laser welding.

12. (original) The method of claim 1, wherein applying a pressure includes clamping the pair of overlapping workpieces together.

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13. (original) The method of claim 1, wherein the disposing the filler material includes:

placing the filler material on a first workpiece; and
placing a second workpiece on the filler material.

14. (currently amended) A welded joint comprising:
a pair of overlapping workpieces, the workpieces having surface characteristics that define one or more gaps in the overlapping region; and
a filler material that is made from a material that is metallurgically compatible with the material of the workpieces, the filler material comprising a skeletal structure having porous regions defined by solidly connected ligaments, the filler material ~~capable of being~~ having been crushed so as to increase its density and to substantially fill the one or more gaps.

15. (original) The joint of claim 14, wherein a density of the filler material is greater than or equal to 70%.

16. (original) A welded joint made by the method of claim 1.

17. (previously presented) An automobile body with a welded joint made by the method of claim 1.

18. (currently amended) A method of joining a pair of overlapping workpieces, the method comprising:
providing a first workpiece and a second workpiece having surface characteristics that result in one or more gaps at an interface when the workpieces are placed one on top of the other;

disposing a filler material at ~~a gap~~ the interface between the pair of overlapping workpieces, the filler material comprising a skeletal structure having porous regions

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defined by solidly connected ligaments, and having an initial density greater than or equal to 2% and less than or equal to 50%;

applying a pressure to at least one of the workpieces so that the filler material is crushed to substantially fill the one or more gaps, wherein after the pressure is applied, the filler material has a final density greater than or equal to 70% and less than 100%; and joining the two workpieces together in a region defined by the filler material.

19. (previously presented) The method of claim 7, wherein the porous material comprises a honeycomb structure.

20. (new) The method of claim 1, wherein:

the providing comprises providing the first workpiece and the second workpiece such that the one more gaps have a gap dimension equal to or greater than about 0.5 millimeters and equal to or less than about 2 millimeters.

21. (new) The method of claim 1, wherein:

the joining is brazing; and

the brazing results in braze material being drawn into the porous filler material by capillary action, thereby promoting adhesion between individual ligaments of the filler material.